



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/073,608

02/11/2002

Vadakkedathu T. Rajan

YOR920020050

5945

7590

03/03/2006

IBM CORPORATION
INTELLECTUAL PROPERTY LAW DEPT.
P.O. BOX 218
YORKTOWN HEIGHTS, NY 10598

EXAMINER

DATSKOVSKIY, SERGEY

ART UNIT

PAPER NUMBER

2121

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/073,608	Applicant(s) RAJAN ET AL.	
	Examiner Sergey Datskovskiy	Art Unit 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the claims

Claims 1-10 were originally presented. After the First Non-final Office Action, claims 1-10 were amended. Claims 1-10 are still pending in the Instant Application.

Claim Objections

1. Claim 1 is objected to because of the following informalities: amended version of claim 1 contains two different modifications of the step c) added sequentially. It also appears that the first "c)" step has practically the same meaning as step b). Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
3. Claims 1-5 are directed to a method that describes various steps of a computer program. Such program by itself is an implementation of an abstract algorithm. Abstract ideas (see *Warmerdam*, 33 F.3d at 1360, 31 USPQ2d at 1759) or mere manipulation of abstract ideas (see *Schrader*, 22 F.3d at 292-93, 30 USPQ2d at 1457-58) are not patentable. However, for claims including such excluded subject matter to

be eligible, the claims must be for a practical application of the abstract idea. Such practical application can be identified in the following ways:

- a. The claimed invention “transforms” an article of physical object to a different state or thing.
- b. The claimed invention otherwise produces a useful, concrete and tangible result.

Claims 1-5 disclose a software product implemented to run on a computer. Such implementation and execution does not produce any physical transformations. Even if we assume that modifying data in computer memory is a “transformation”, it cannot be called a “physical transformation” since computer information is just a sequence of bits stored in the memory as electrical or magnetic signals. These signals represent a form of energy, and transforming such energy cannot be called a “physical transformation”.

The next step would be to determine whether the claimed invention produces a useful, concrete and tangible result. The method of claim 1 consists of steps for *running* a program, *determining* properties and correlation, and *selecting* a desired property. These steps do not produce any tangible real-world result. With *selecting* being the final step, there is no limitation that would communicate any result to a user in such a way that a human could perceive it. *Selecting* by itself can mean as little as changing a value of a bit in the computer memory. Such change is just an energy transformation that cannot be sensed by a human and, therefore, does not represent a tangible result.

Therefore, claims 1-5 are rejected because of being directed to an abstract idea that does not have any substantial practical application.

Art Unit: 2121

4. Claims 6-10 are directed to a computer readable medium including computer instructions executable on a computer. These claims could be viewed as producing a tangible result if the claimed medium were limited to a tangible medium. However, the definition of a computer readable medium found in the Specification (paragraph [0046]) does not limit it to being tangible. Specifically, it says that: "...*the computer readable medium may include computer readable information in a transitory state medium...*" Such definition allows the medium to be represented by an electronic signal. Electronic signals represent a form of energy and are not tangible. Thus, claims 6-10 are also rejected under 35 U.S.C. 101 as being directed to an abstract idea.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 7 recites the limitation "the determining of an initial property in step (b)" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. Step (b) of claims 1 and 6 does not contain "determining of an initial property", instead it performs "determining a desirable property.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Clawson (US Patent No. 6,112,304).

Claim 1

Clawson teaches a method of characterizing objects generated during at least a partial run of a program, each object being characterized by a plurality of alternative properties which can be selected (col. 4, lines 25-34. Objects are disclosed as denizen processes, selectable alternative property is disclosed as location), said method comprising:

a) instrumenting said at least partial run of said program to determine characterization information about each of said objects (disclosed by a configuration portion, see col. 7, lines 29-41);

b) determining a desirable property for said objects (col. 4, lines 28-34; col. 11, lines 40-47);

c) determining a correlation between said desirable property and said characterization information for each of said objects (col. 11, lines 48-54);

d) using said correlation to select an property for an object subsequently created during an at least partial run of said program based upon characterization information about the subsequently created object (col. 13, lines 24-29; col. 14, lines 2-6. Since a denizen can spawn an identical or partially identical offspring, the same correlation takes place, selecting a location for the new process based on its configuration).

Claim 2

Clawson teaches a method as set forth in claim 1, wherein the determining of an initial property in step (b) is carried out by minimizing total cost of interaction among components during at least a partial run of said program (disclosed invention is targeted to optimize performance, see col. 27, lines 20-25, for example, optimizing database queries, see col. 26, lines 31-33. Such optimization implies a minimization of total cost of interaction as it results in performing fewer computational operations).

Claim 3

Clawson teaches a method as set forth in claim 1, wherein said characterization information of an object comprises at least one of said object's class, classification of said object's creator object, and a code identification of said object's creation site (col. 7, lines 35-41, a code of said object's creation site is disclosed as an ocean identifier. See also col. 8, lines 59-61, disclosing an inclusion of classification information).

Claim 4

Clawson teaches a method as set forth in claim 1, wherein said alternative properties comprise a string representation selected from ASCII, EBCDIC, and UNICODE (col. 20, lines 25-26, lines 38-42).

Claim 5

Clawson teaches a method as set forth in claim 1, wherein said alternative properties comprise a data structure selected from hash table, tree, and compressed data structures (col. 15, lines 30-33; See also compressed data disclosed at col. 16, lines 50-59).

Claim 6

Clawson teaches a computer readable medium including computer instructions executable on a computer (col. 27, lines 32-45) for carrying out a method of characterizing objects generated during at least a partial run of a program, each object being characterized by a plurality of alternative properties which can be selected (col. 4, lines 25-34. Objects are disclosed as denizen processes, selectable alternative property is disclosed as location), said method comprising:

a) instrumenting said at least partial run of said program to determine characterization information about each of said objects (disclosed by a configuration portion, see col. 7, lines 29-41);

b) determining a desirable property for each of said objects (col. 4, lines 28-34; col. 11, lines 40-47);

c) determining a correlation between said desirable property and said characterization information for each of said objects (col. 11, lines 48-54);

d) using said correlation to select an property for an object subsequently created during an at least partial run of said program based upon characterization information about the subsequently created object (col. 13, lines 24-29; col. 14, lines 2-6. Since a denizen can spawn an identical or partially identical offspring, the same correlation takes place, selecting a location for the new process based on its configuration).

Claim 7

Clawson teaches a computer readable medium as set forth in claim 6, wherein the determining of an initial property in step (b) is carried out by minimizing total cost of interaction among components during at least a partial run of said program (disclosed invention is targeted to optimize performance, see col. 27, lines 20-25, for example, optimizing database queries, see col. 26, lines 31-33. Such optimization implies a minimization of total cost of interaction as it results in performing fewer computational operations).

Claim 8

Clawson teaches a computer readable medium as set forth in claim 6, wherein said characterization information of an object comprises at least one of said object's

Art Unit: 2121

class, classification of said object's creator object, and a code identification of said object's creation site (col. 7, lines 35-41, a code of said object's creation site is disclosed as an ocean identifier. See also col. 8, lines 59-61, disclosing an inclusion of classification information).

Claim 9

Clawson teaches a computer readable medium as set forth in claim 6, wherein said alternative properties comprise a string representation selected from ASCII, EBCDIC, and UNICODE (col. 20, lines 25-26, lines 38-42).

Claim 10

Clawson teaches a computer readable medium as set forth in claim 6, wherein said alternative properties comprise a data structure selected from hash table, tree, and compressed data structures (col. 15, lines 30-33; See also compressed data disclosed at col. 16, lines 50-59).

Response to Arguments

7. Applicant's arguments filed December 27, 2005 have been fully considered but they are not persuasive.

Regarding the Claim Rejection under 35 U.S.C. §101:

Changes introduced to claim 1 in the Amendment fix the problem of the claimed invention not belonging to “technical arts” even though, such limitation is not necessary now in view of the recent Board decision. However, the other part of the 35 U.S.C. 101 rejection stays in place. Said rejection talks about the claims being directed to an abstract idea. It appears that Applicant defines claimed *objects* to be similar to the attribute data objects of Lowry. Applicant cites the court’s definition of ADO as a single primitive element “*comprising sequences of bits which are stored in the memory a electrical (or magnetic) signals that represent information.*” This definition describes the data objects as being comprised of electrical or signals. Signals are a form of *energy*, and transformation of signals is not a *physical* transformation of objects. Therefore, claims 1-10 stay rejected as being directed to a non-statutory subject matter as described in details in 35 U.S.C. §101 rejection above.

Regarding the Claim Rejection under 35 U.S.C. §102:

Applicant recites steps of the method of claim 1 and states that Clawson does not teach or suggest any of the foregoing. On the contrary to Applicant’s conclusory statement, Clawson discloses all of the mentioned steps as described by Examiner in the previous Office Action. Every mentioned claim limitation has been followed by a parenthesized description pointing to the specific place where it has been disclosed by Clawson. Therefore, claims 1-10 stay rejected under 35 U.S.C. §102, with said rejection being repeated in the current Office Action.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sergey Datskovskiy whose telephone number is (571) 272-8188. The examiner can normally be reached on Monday-Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight, can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S.D.

Assistant examiner

A.U. 2121

A handwritten signature in black ink, appearing to read "Anthony Knight", is positioned above the printed name.

Anthony Knight

Supervisory Patent Examiner

Technology Center 2100